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that the size and color differences may be due to age, but in the *P. violæ* proper the spores are ellipsoidal, while in the other they are nearly perfect spheres. No oospores have yet been found. Whether it proves to be the same species or not, and that can be settled probably by cultures, the fact remains that one of our choicest of hot-bed plants is attacked by a mildew that from its destruction attracts the attention of the violet grower and should be treated with fungicides. A weak solution of the ammoniacal carbonate of copper would be likely to prove an effective remedy.

Among the species of cystopus, all of which have been abundant, only one need be mentioned here. The search, among students of this genus, for the oospores of *Cystopus ipomææ-panduranæ*, Schw. (*C. Convolvulacearum*, Otth.) upon wild sweet potato, or Man-of-the-Earth (*Ipomæa pandurata*), a miserable weed with enormous roots, has been prolonged and was rewarded only recently, as stated by Dr. Farlow in *Botanical Gazette* for August, page 187. This fungus was abundant in some parts of the State this year, doing valiant work in helping to destroy a pest in cultivated grounds. In some cases the enlargements of the stem where the oospores are borne in great numbers were many times the normal size. The particular point, however, in mentioning the species here is to announce that the leaves were found distorted, and in these thickened points the oospores abound.

It may be said in closing, that strange distortions of the flower stalks of wild mustard were met with this season, which were due to the growth within of another member of the same genus as above mentioned. It also works striking modifications of the flowers and fruit of the cultivated radish, which are often observed by truckmen who let this plant go to seed.

PREVALENCE OF ERGOT IN 1889.

By ERWIN F. SMITH.

Claviceps purpurea, (Fr.) Tul. was unusually prevalent along the east shore of Lake Michigan in the summer of 1889. At South Haven and St. Joseph I saw it in every rye-field, and it was so abundant that it could be gathered by the handful. Even scattering patches of rye in orchards, meadows, and along roadsides were infected. The best developed sclerotia were two inches long, but where a half dozen or more grew from one head they were smaller. In that part of the country it has been customary for some years to grow rye in the peach orchards as a green manure. It is sown in the autumn and ploughed down in the spring; but some portion of the crop always escapes the plow and comes to maturity. Moreover, through neglect or for other reasons, the rye is not always turned under green, so that the soil may be

assumed to be infected by sclerotia each year. Another favoring condition was an unusually rainy season, April, May, and June being very wet.

The same month (July) I carefully examined a number of large rye-fields in the central part of the State, where the spring was also wet, but where rye is not commonly cultivated, nor ever twice in succession on the same field, the result being that I could not find a single sclerotium.

It would be interesting to know whether ergot was abundant in other parts of the country, particularly along the Atlantic coast, where the rainfall was very heavy, 1889 being one of the wettest seasons on record.

AN EXPERIMENT IN THE TREATMENT OF BLACK-ROT OF THE GRAPE.

By B. T. GALLOWAY.

Despite the fact that black-rot has ravaged the vineyards of this country for more than a quarter of a century, no systematic attempt, aside from bagging the fruit, was made to combat it until within the past three years. It is true that numerous "remedies" were proposed for the disease, but in no case had any of them stood the test of a thorough trial.

Bagging the fruit as a means of preventing rot first began to be extensively practiced something like ten or a dozen years ago, and there is no doubt that when properly done it is still the safest and most trustworthy means of saving the fruit. The only drawback to bagging is the cost, which must necessarily be considerable, as each bunch, in order to be made secure, is first bagged, then the bag is fastened, and finally, when the fruit is gathered, the bags must be removed. All of this of course consumes time, and time is money in this case as well as in any other. Where a man has a few choice varieties that he wishes to preserve for table use it would probably pay him to bag the fruit; but if he is a large grower, using his crop for wine, the impracticability of such a plan will at once become apparent.

At the time bagging first began to be practiced, grape-growers, as a rule, recognized the fact that black-rot was a fungous disease, due to outside influences, and not brought about by any morbid conditions of the plant. At first it was the practice to put on the bags as soon as the first rot specks appeared; but experience soon demonstrated that to preserve the fruit it was necessary to inclose the clusters shortly after the flowers opened.

In order to settle definitely the cause of rot and if possible to provide a remedy, this Department began an investigation of the subject in 1886. It is not necessary here to go into the details of this work, it being sufficient for our purpose to say that it was proved beyond question that the malady was caused by a parasitic fungus growing within